

CLAIMS

1. A nucleic acid sequence encoding an enzyme of the starch biosynthetic pathway in a cereal plant, wherein the enzyme is selected from the group consisting of starch
5 branching enzyme I, starch branching enzyme II, starch soluble synthase I, and debranching enzyme, with the proviso that the enzyme is not soluble starch synthase I of rice, or starch branching enzyme I of rice or maize, and that starch branching enzyme II does not have the N-terminal amino acid
10 sequence:

AASPGKVLVFDGEDDLASPA.

2. A sequence according to claim 1, wherein the
15 sequence is a genomic DNA or cDNA sequence.
3. A sequence according to claim 1 or claim 2, wherein the sequence is functional in wheat.

- 20 4. A sequence according to any one of claims 1 to 3, wherein the sequence is derived from a *Triticum* species.

5. A sequence according to claim 4, wherein the
25 *Triticum* species is *Triticum tauschii*.

6. A sequence according to any one of claims 1 to 5, wherein the sequence encodes starch branching enzyme I or a biologically-active fragment thereof, and wherein the sequence has at least 70% sequence homology with the
30 sequence shown in SEQ ID NO:5 or SEQ ID NO:9.

7. A sequence according to claim 6, wherein the homology is at least 90%.

- 35 8. A sequence according to any one of claims 1 to 5, wherein the sequence encodes starch branching enzyme II or a biologically-active fragment thereof, and wherein the sequence has at least 70% sequence homology with the sequence shown in SEQ ID NO:10.

62
- 118 -

biologically-active fragment thereof, and wherein the promoter sequence has at least 70% sequence homology with the sequence shown in SEQ ID No:8.

5 18. A sequence according to claim 17, wherein the homology is at least 90%.

10 19. A promoter according to claim 16, wherein the promoter is a starch soluble synthase I promoter or biologically-active fragment thereof, and wherein the promoter sequence has at least 70% sequence homology with the sequence shown in SEQ ID No:15.

15 20. A sequence according to claim 19, wherein the homology is at least 90%.

20 21. A nucleic acid construct comprising a nucleic acid sequence encoding an enzyme of the starch biosynthetic pathway in a cereal plant, operably linked to one or more nucleic acid sequences facilitating expression of the nucleic acid sequence in a plant, wherein the enzyme is selected from the group consisting of starch branching enzyme I, starch branching enzyme II, starch soluble synthase I, and debranching enzyme, with the proviso that
25 the enzyme is not soluble starch synthase I of rice, or starch branching enzyme I of rice or maize, a biologically-active fragment thereof, and that starch branching enzyme II does not have the N-terminal amino acid sequence:

30 AASPGKVLVPDGEDDLASPA.

22. A nucleic acid construct for targeting a gene to the endosperm of a cereal plant, comprising one or more promoter sequences selected from the group consisting of
35 SBE I promoter, SBE II promoter, SSS I promoter, and DBE promoter, operatively linked to a nucleic acid sequence encoding a protein, wherein the expression of the targetted gene in the endosperm of a cereal plant is modified.

add (1)